

# Configuration Baseline Variance Request for the FASIC Group's Workstation Environment

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(Submitting on behalf of the Fermilab ASIC Group)

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## Background:

The Fermilab ASIC group (FASIC) states that it has produced many designs that are worth millions of dollars using Cadence IC5.1 software. Cadence IC5 will not be supported running on Scientific Linux Ver. 5 (SLF5). FASIC requires backward compatibility to access those designs. Cadence does, technically, provide software that migrates old IC5.1 to the current version the cadence software, which is IC6, however they admit that there are software flaws.

One FASIC system has been updated to SLF5 and has been tested with IC5.1 and it appears to work. But, to guarantee that in the case of a catastrophe in which IC6.1 does not work and/or IC5.1 has a bug while running in SLF5, we need to be able to go back to the SLF4 to run IC5.1 on a single workstation. A new system, Oxide, has been purchased in order to serve this function in a secure manner. The plan for this single workstation is detailed under Part 1 of the variance request below.

FEF/SLA has begun the upgrade process of the rest of the FASIC workstations to SLF5. Unfortunately, the FASIC group was required to work on the VI-PIC2 chip design during the planned Nov – Feb upgrade timeframe. The system upgrades were put on hold to avoid any productivity interruption during the tight deadlines on the chip design and submission.

The submission was completed Feb 20, 2012. FASIC is now involved in the fabrication verification stage. This will allow us to upgrade some of the systems by the Feb 29, 2012 deadline. We expect to be able to complete the process by March 21, 2012. Part 2 of the variance request details a request for an extension to complete the upgrade of the workstations to SLF5 and implement Part 1.

There are two parts to this variance request.

1. **Oxide running SLF4**

The catastrophic fallback plan for oxide.fnal.gov

2. **Extension until March 21, 2012**

The request for an extension to complete the upgrade of the workstations to SLF5

## System function:

System oxide.fnal.gov will run as a normal SLF5 Cadence workstation during standard operations. The system was purchased with extra disks one for SLF4, one for SLF5, and a large disk to contain copy a snapshot of the Bluearc home and data areas.

## Access Enumeration:

System Administration Database Cluster: FASIC

Users: Fermilab ASIC workstation users:

Jim Hoff

Alpana Shinai

Gzegorz Duepuch

Tom Zimmerman

Marcel Trimpl

Farah Khalid

CS/SCF/FEF Department

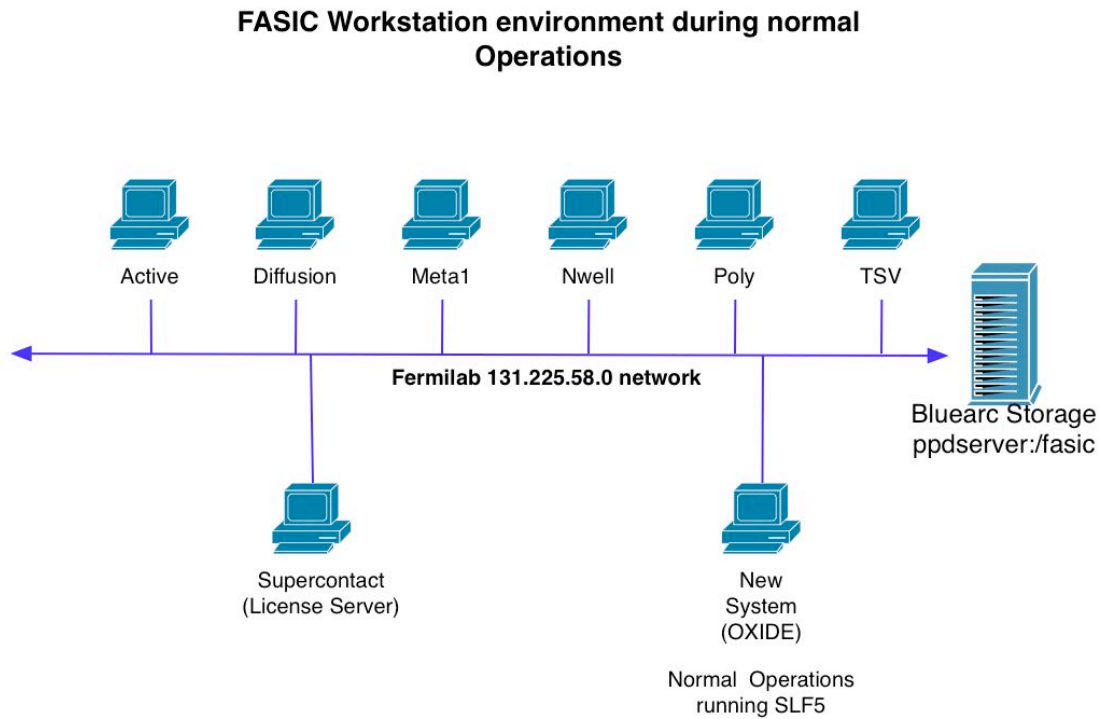
**In addition Oxide running SLF4:**

Services: License request access to supercontact.fnal.gov via a null modem connection

### Variance Request:

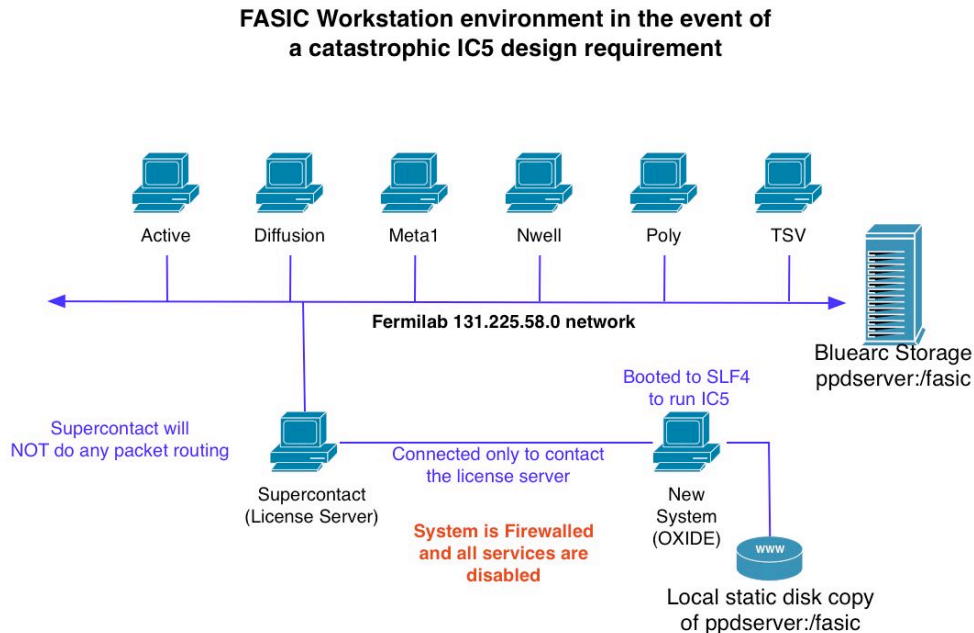
### Oxide running SLF4

Oxide would be a dual boot machine. The oxide would normally be booted to run under the SLF5 and would therefore be useful as another FASIC standard workstation (Fig1).



If SLF4 is needed oxide will be **disconnected** from the network and connected to supercontact's second Ethernet card via null cable. This would allow oxide access to the license server, but still be **isolated** from

the Fermilab network. The data for the prior version of Cadence would be a static copy stored locally on the new machine for access so no NFS access from oxide, while running SLF4, would be needed (Fig2).



### Extension until March 21

Allow until March 22, 2012 before network blocking begins on the System Administration Database Cluster Group: FASIC that contains the following systems:

oxide, poly metal1, nwell, active, diffusion, supercontact, tsv.

Although we expect all of the systems except for metal1, nwell, and active to be upgraded to SLF5 by the Feb 29, 2012 deadline, this variance will give us time to complete all testing and implementation.

### Variance Remediation:

#### Oxide running SLF4

- The system will have no physical connection to the Fermilab Network while booted into SLF4
- Iptables will be implemented to DROP all traffic EXCEPT:
  - lmgrd (The FlexLM License manager) only accepted from Supercontact (131.225.53.161)
- Full logging will be enabled
- The system will have a grub password so the system cannot be booted to SLF4 without FEF administration assistance and a Service Desk ticket to log the request.
- All unnecessary services will be disabled
- The system will only be used in SLF4 for the time required to complete the work on the design. and only locally by a person sitting in front of the workstation.
- Oxide is in full compliance with the Linux security baseline
- Oxide is located in WH and is, managed by CD/SCF/FEF/SLA
- The BIOS will have a password to stop any reconfiguration of boot parameters.

**Extension until March 21**

- All machines have up to date MISCOMP and SysadminDB registrations
- All FASIC systems are in full compliance with the Linux security baseline
- System and service logs are forwarded to the Computer Security logging service
- All unnecessary services are disabled
- Firewall rules are in place to only allow connections from fnal.gov except Kerberized ssh.

**Variance Impact:**

If a variance is not granted, the FASIC group could find itself in a situation that they are not able to access and modify previously created designs.

If the request for the extension to variance were not granted all of the workstations could be blocked from the network and all productivity in the FASIC group would come to a standstill.

**Variance Targets:**

System Administration Database Cluster: FASIC

**Variance Expiration:****Oxide running SLF4**

Indefinitely

**Extension until March 21**

The extension to implement the plan and avoid blocking would be until March 22, 2012.

**Risks:**

Obsolete OS no longer has vendor support or patches.